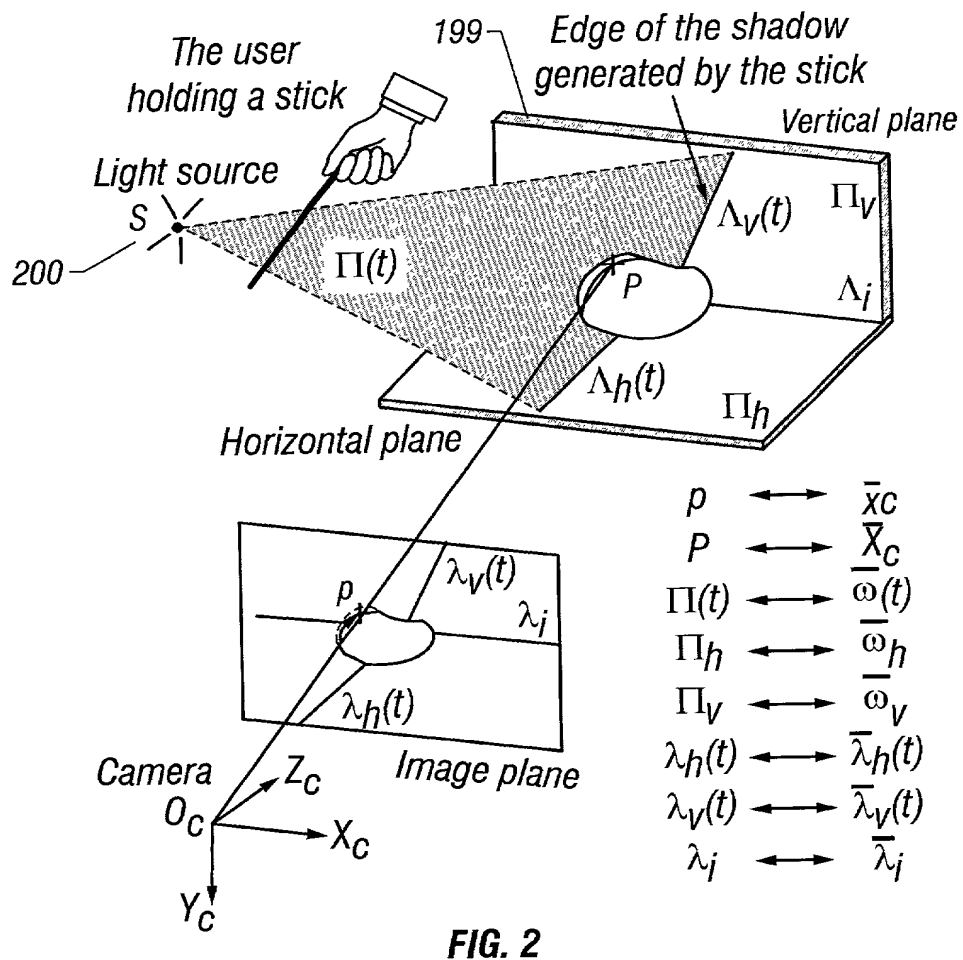
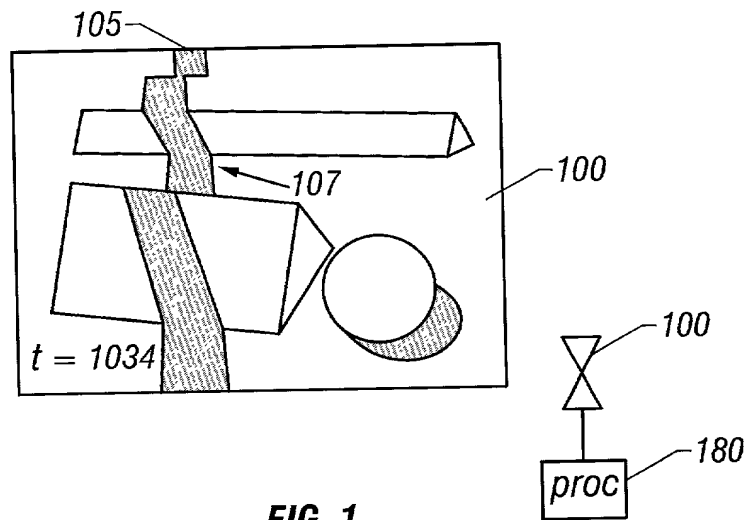


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- 300 — Calibration - find  $\Pi_H$  position      1) Shadow times at each pixel
- 305 — Obtain image of the shadow      2) Locate projections
- 310 — Convert projections ( $\lambda$ ) into actual shadow info ( $\Lambda$ )
- 315 — Find shadow plane
- 320 — Find  $P \in X_C$  by triangulation

FIG. 3

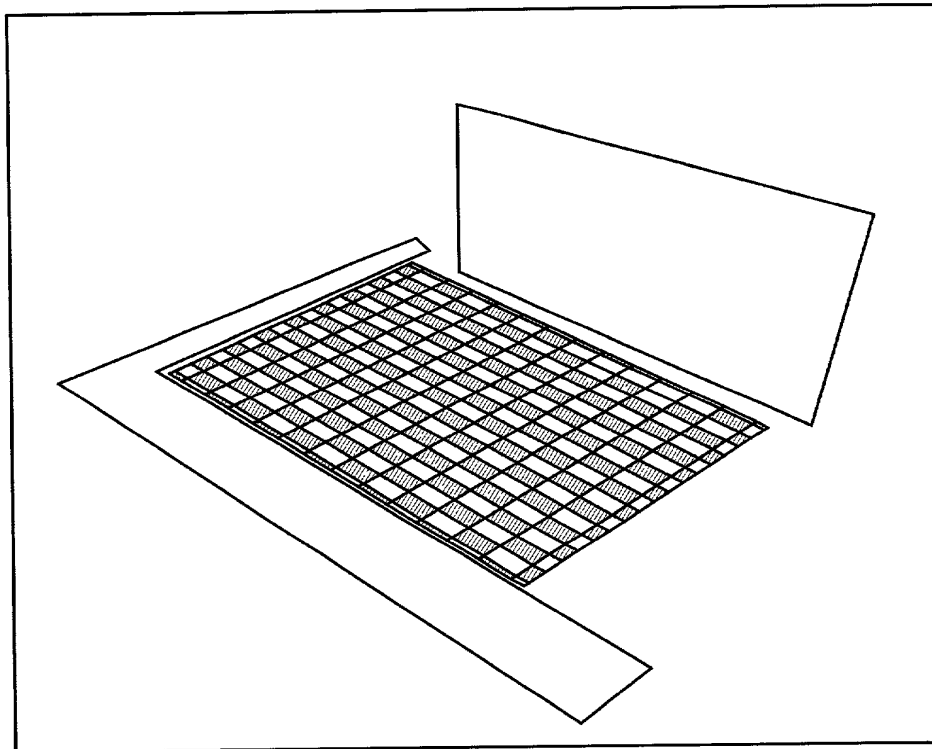


FIG. 4A

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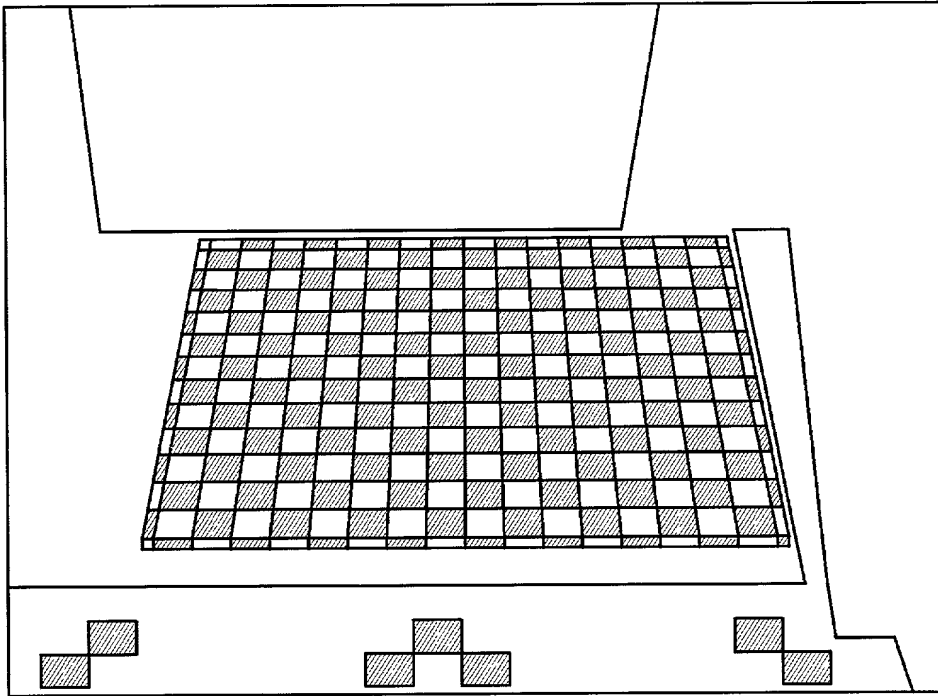


FIG. 4B

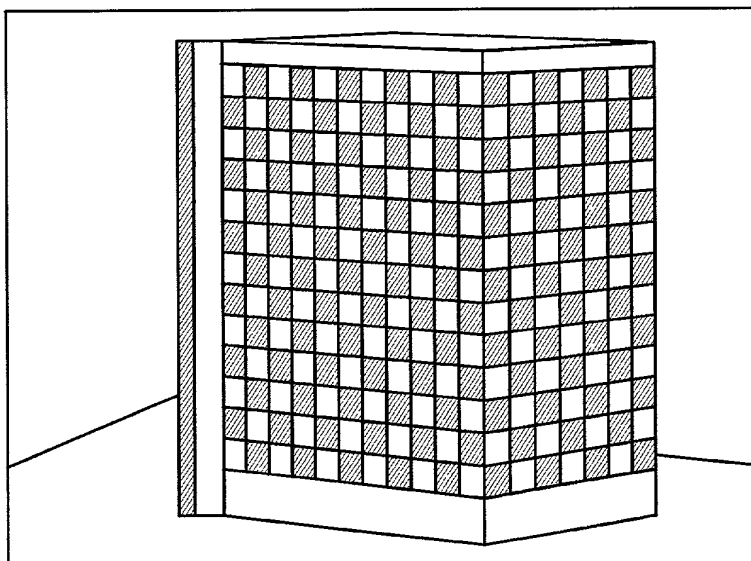
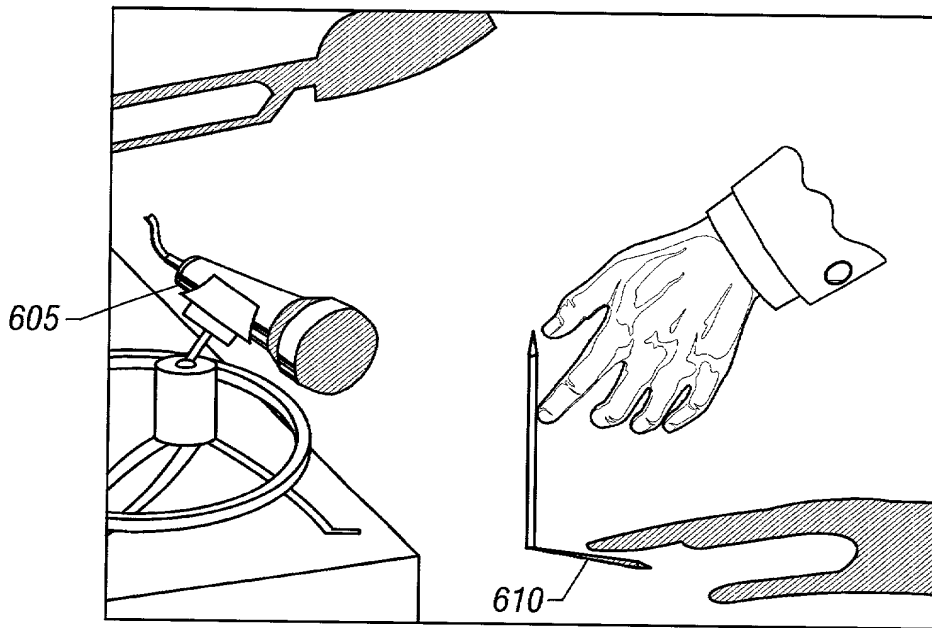
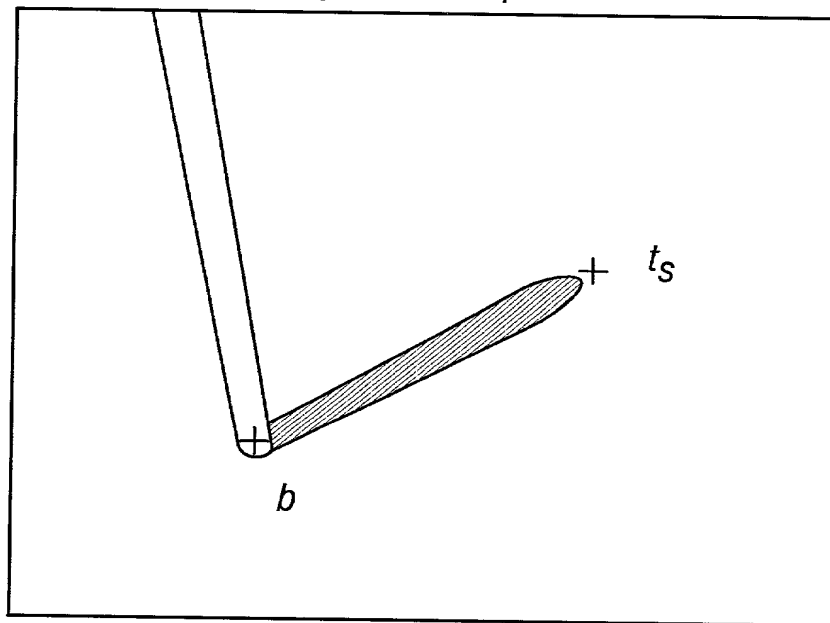


FIG. 5



**FIG. 6A**

*A pencil of known height  $h$   
orthogonal to the plane*



**FIG. 6B**

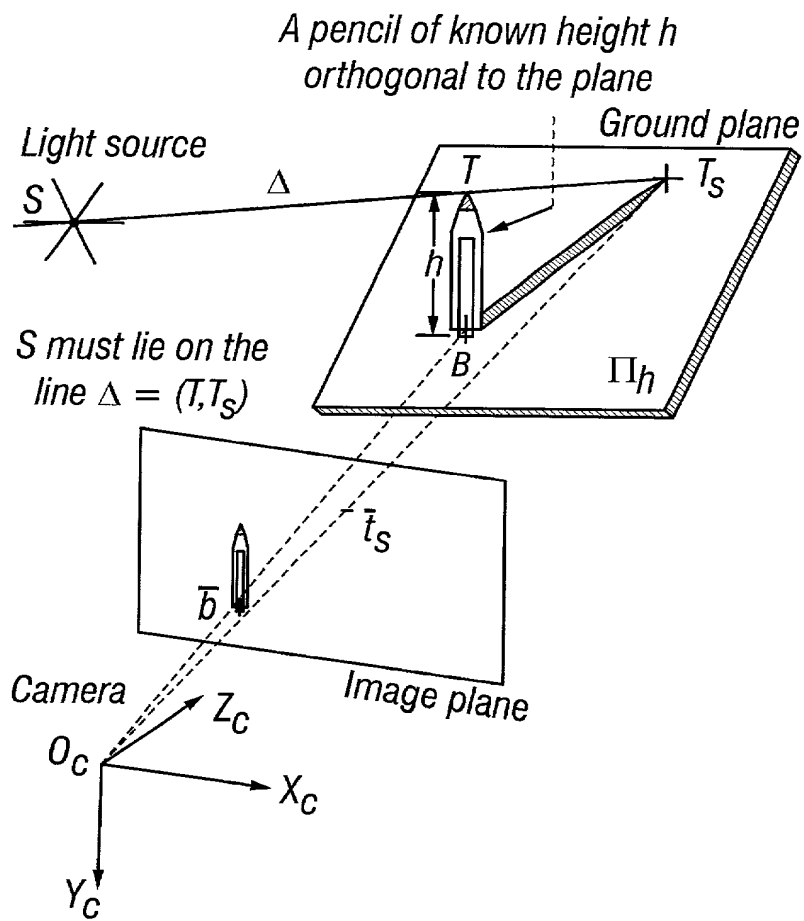
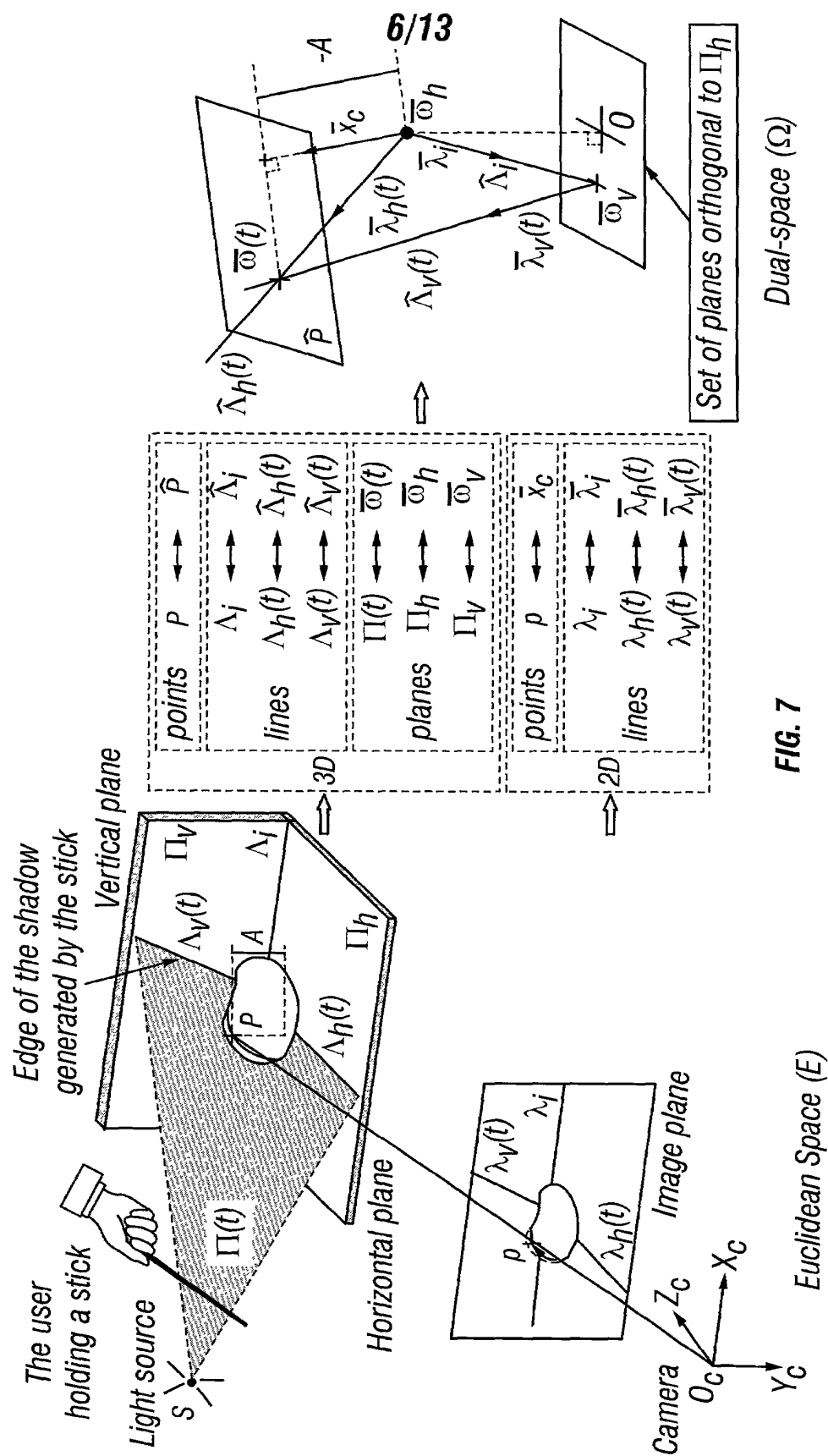


FIG. 6C





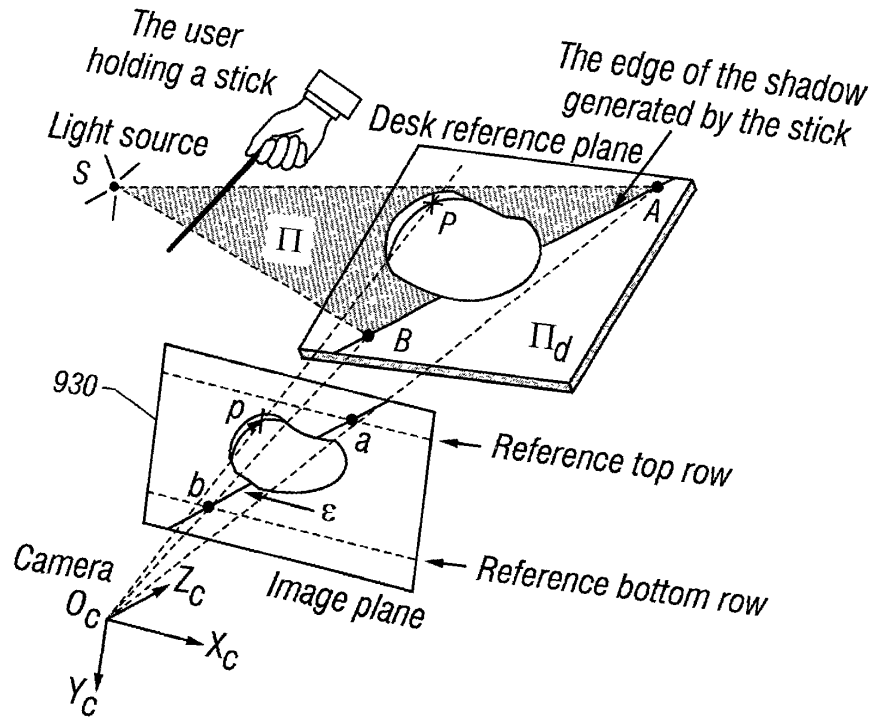


FIG. 9

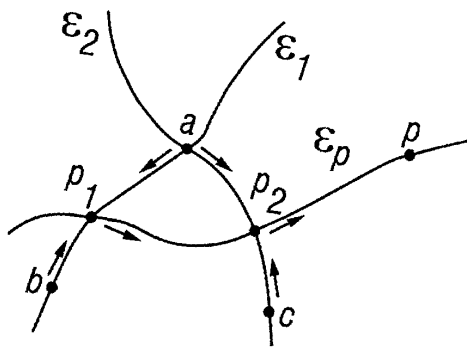


FIG. 10

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successive steps:

- 1120 Step 1: *Acquire a set shadow images, extract the shadow edges and compute their intersections.*
- 1130 Step 2: *Reject all isolated edges (and isolated groups of edges) so that the entire edge-web is fully connected (def. 2). Results a set of  $N$  edges  $\mathcal{E}_t$  and  $N_p$  intersection points  $p_t$ .*
- 1140 Step 3: *Build the  $2N \times 2N$  matrix  $C$  (eq. 7.10, 7.11 and 7.12), and compute the unitary seed vector  $\bar{U}^0$  by SVD. Euclidean reconstruction is then achieved up to the three scalars  $\alpha$ ,  $\beta$ , and  $\gamma$ .*
- Step 4: *Select (at least) three points in the scene with known depths, and solve linearly for the remaining scalars  $\alpha$ ,  $\beta$ , and  $\gamma$  (eq. 7.13).*
- Step 5: *Compute the list of shadow plane vectors  $\bar{\omega}_j$  (eq. 7.7 and 7.2) and triangulate all the points in the edge-web. The resulting set of 3D points may then be triangulated into a surface mesh for visualization purposes (fig. 7.5 and 7.6).*

FIG. 11

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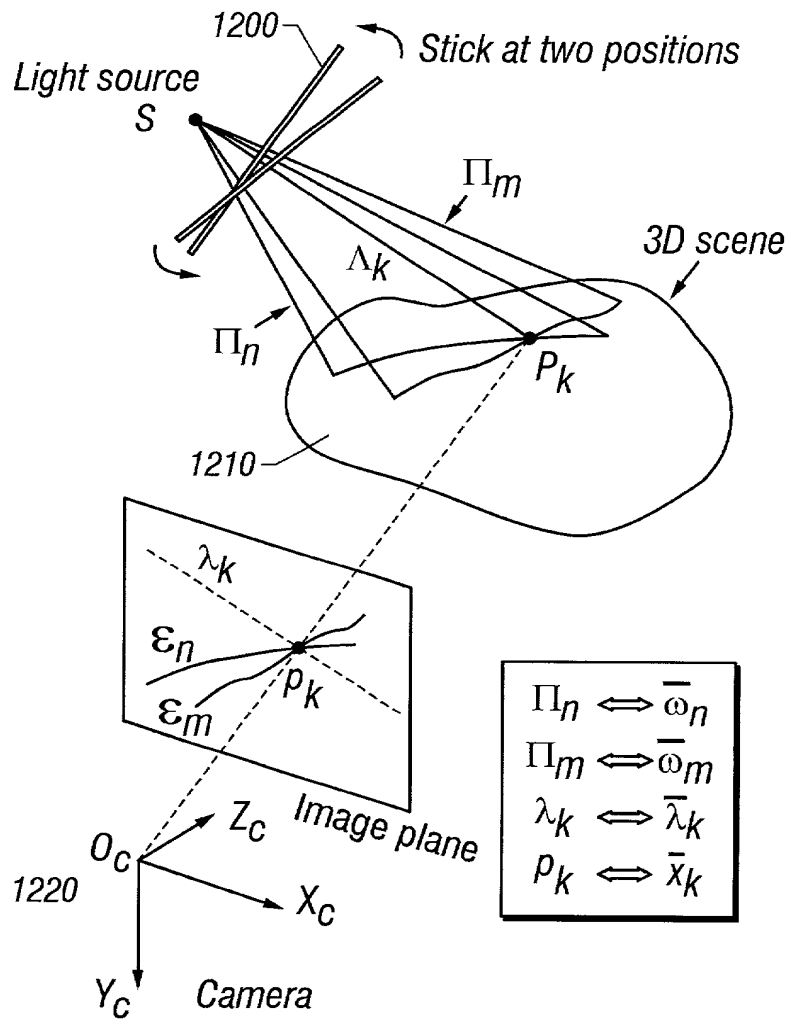


FIG. 12

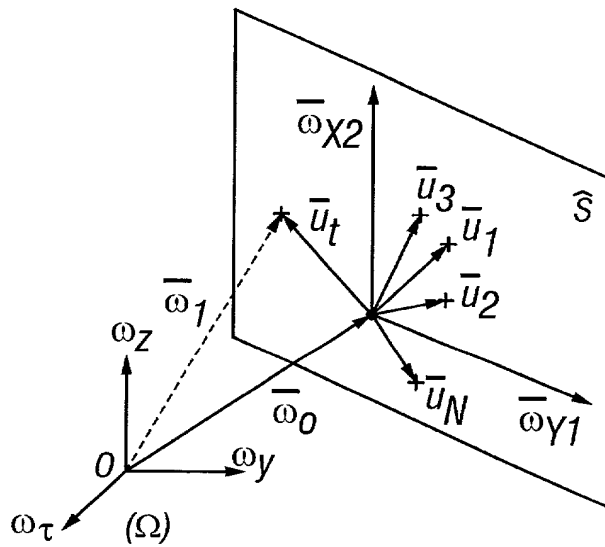


FIG. 13

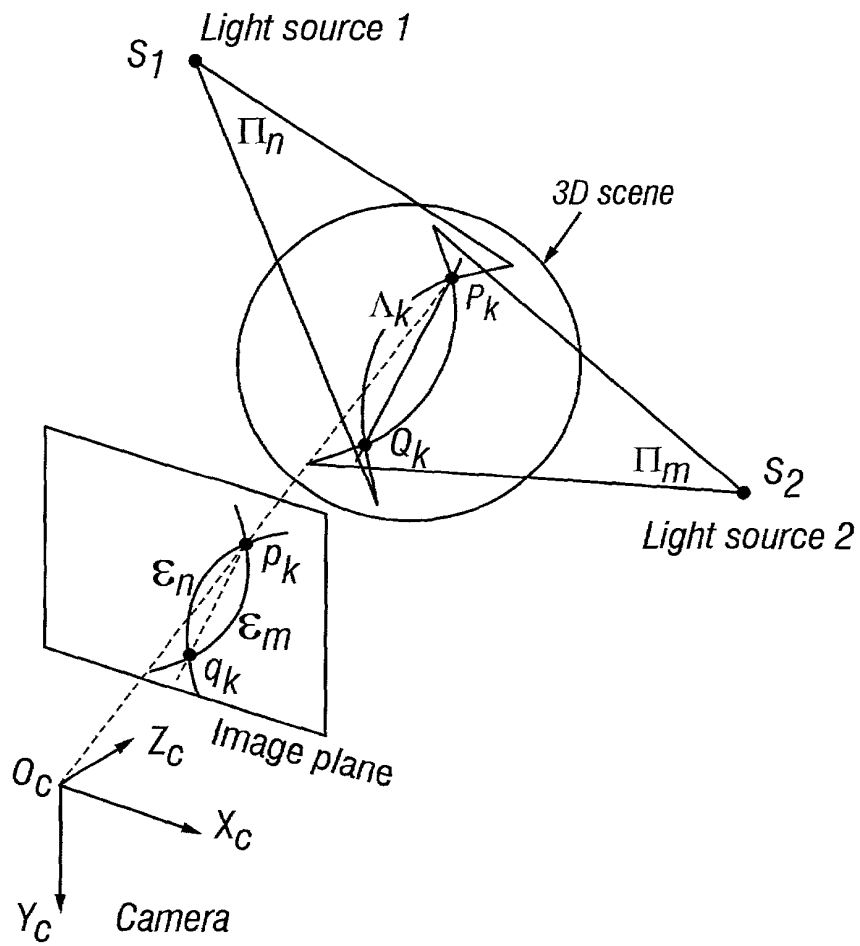


FIG. 14

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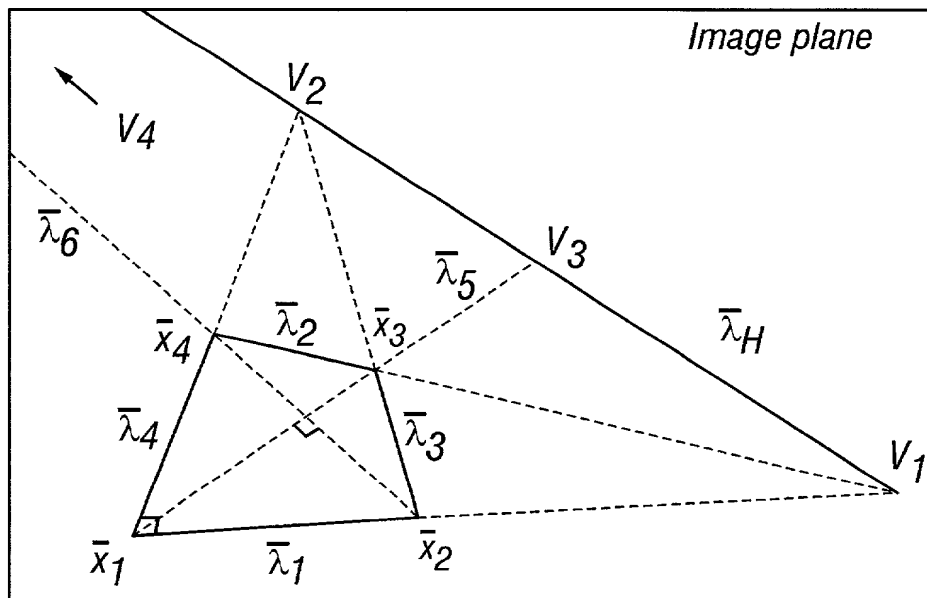
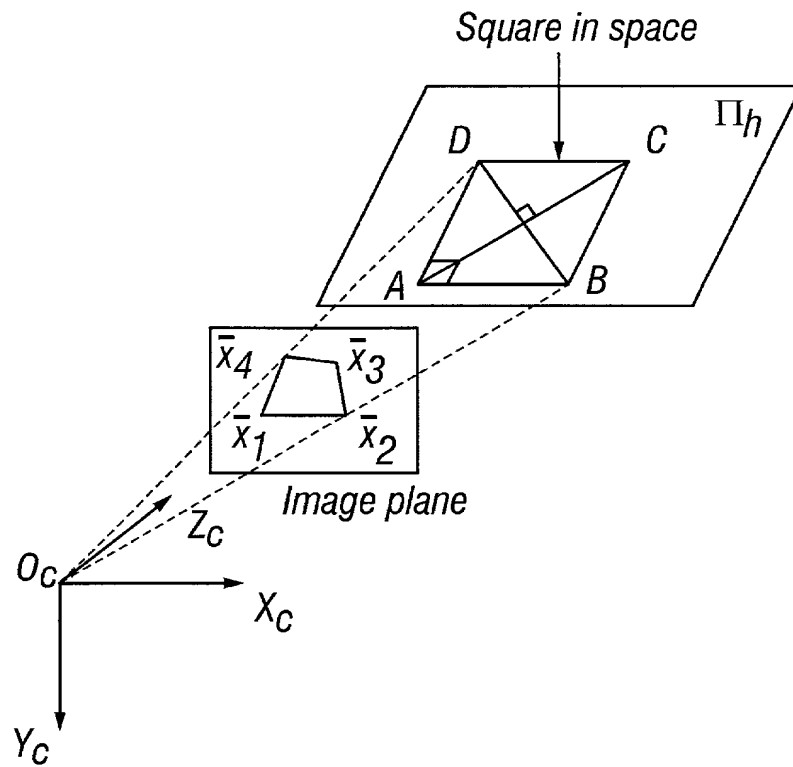


FIG. 15

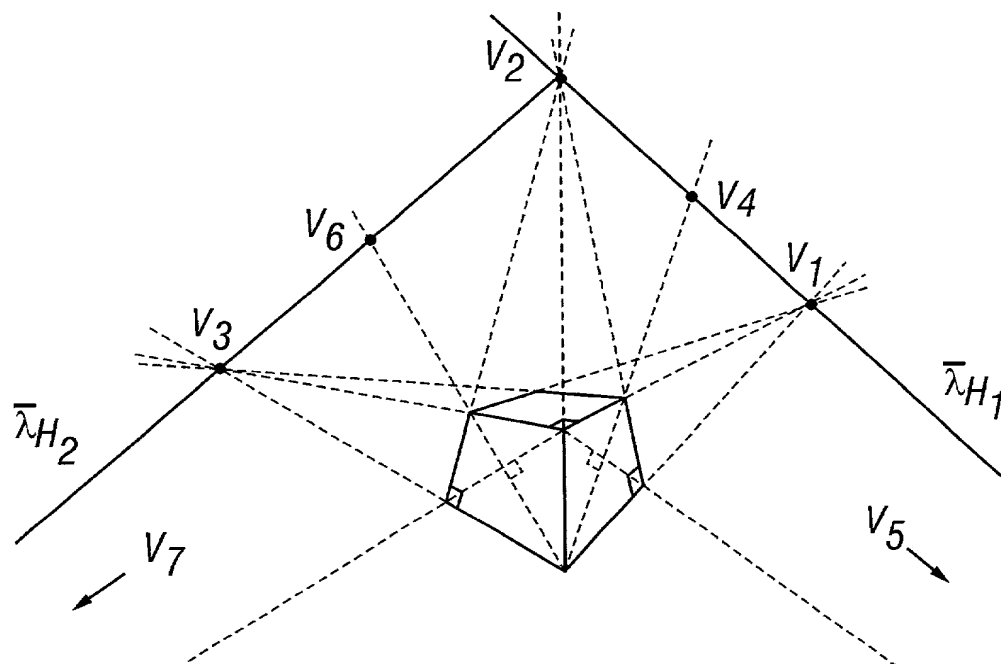


FIG. 16